Tunable Narrowband Semiconductor Reference Oscillator Technology for Coherent Detection Lidar

DAVID M. TRATT, KAMJOU MANSOUR, ROBERT T. MENZIES, YUEMING QIU, SIAMAK FOROUHAR, PAUL D. MAKER, AND RICHARD E. MULLER

Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, USA
Tel. +1-818-354-2750

ABSTRACT

Current reference oscillators at 2-micron wavelengths employ crystal laser systems. Monolithic semiconductor laser reference oscillators would offer reduced complexity, improved efficiency, and superior resistance to alignment degradation. We report on a program to fabricate prototype novel architecture semiconductor lasers with the power and spectral characteristics required for coherent Doppler lidar.